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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,706

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Nobuyuki Taki

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EXAMINER

COLEMAN, KEITH A

ART UNIT

PAPER NUMBER

3747

MAIL DATE

DELIVERY MODE

06/13/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/577,706	Applicant(s) TAKI ET AL.	
	Examiner KEITH COLEMAN	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hasegawa (US Patent No. 5,460,138).

With regards to claims 1 and 7, the patent to Hasegawa discloses a cranking module (22) that is always connected to an output shaft (12) of the internal combustion engine (14) via a power transmission member (20,18) and cranks the internal combustion engine (14) through actuation of a rotating shaft (motor 27 has a rotating shaft), which is interlocked with rotation of the output shaft (12, motor 27 through flywheel 18); a reverse rotation presumption module (10,35,27) that presumes reverse rotation of the internal combustion engine (14, Figure 5, Col. 4, Lines 25-42) based on the measured revolution speed of the internal combustion engine (via observing change in position, Col. 1, Lines 1-5 and Lines 30-45); and a cranking control module (22, Col. 2, Lines 52-55) that prohibits cranking of the internal combustion engine (14) regardless of fulfillment of an auto start condition, when said reverse rotation presumption module (10,35,27) presumes the reverse rotation of the internal combustion engine (14, Figure 5, Col. 4, Lines 25-42).

With regards to claims 2 and 8, the patent to Hasegawa discloses a starting apparatus in accordance with claim 1, wherein said cranking control module (22) controls said cranking module (22) to crank the internal combustion engine (14) even before completion of a stop operation of the internal combustion engine (14), which is triggered by fulfillment of an auto stop condition (i.e. automobile is disengaged, Col. 1, Lines 60-67) immediately before fulfillment of the auto start condition (i.e. automobile is engaged or 'when in use', Col. 2, Lines 55-68), when said reverse rotation presumption module (10,35,27) does not presume the reverse rotation of the internal combustion engine (14) under fulfillment of the auto start condition (Col. 2, Lines 60-65).

With regards to claim 5, the patent to Hasegawa discloses a starting apparatus in accordance with claim 1, wherein the power transmission member (18) is a full-time jaw gear (20) that couples the output shaft (12) with the rotating shaft (12).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (US Patent No. 5,460,138) in view of Kani et al. (US Patent No. 5,114,769).

With regards to claim 6 and 11, the patent to Hasegawa discloses wherein the power transmission member is made of an elastomer (Claim 18 from Hasegawa) but does not positively disclose a resin. Kani et al. discloses a clutch made of resin (Abstract). It should be noted that a clutch and flywheel are interpreted together as a

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power transmission member. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the power transmission member of Hasegawa with a resin material in view of the teaching to Kani et al., in order to have a clutch with a lower specific gravity, high strength, and good friction and anti-wear properties at high temperatures (Col. 1, Lines 10-15 from Kani et al.).

7. Claims 3, 4, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hasegawa (US Patent No. 5,460,138) in view of Kristiansson (US Patent No. 5,323,743).

With regards to claims 3 and 9, the patent to Hasegawa discloses all the limitations of the claimed subject matter, including wherein said reverse rotation presumption module presumes the reverse rotation of the internal combustion engine, based on the measured revolution speed of the internal combustion engine, except a revolution speed measurement module that measures a revolution speed of the internal combustion engine. The patent to Kristiansson discloses a revolution speed measurement module (6, 7) that measures a revolution speed of the internal combustion engine (1). It would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the engine of Hasegawa with speed measurement module in view of the teaching to Kristiansson, in order to receive continuous information concerning the running of the engine (Col. 2, Lines 40-45).

With regards to claims 4 and 10, the patent to Hasegawa in combination with Kristiansson discloses a starting apparatus in accordance with claim 3. Hasegawa discloses the reverse rotation. Kristiansson discloses wherein said rotation presumption module (3) presumes the rotation of the internal combustion engine (1) until the measured revolution speed of the internal combustion engine (1) falls below a predetermined level (Col. 2, Lines 63-68) and a predetermined time period elapses after the fall to eliminate any potential for the rotation of the internal combustion engine (1, Col. 1, Lines 28-36). It should be noted that after 5 seconds or predetermined time period as disclosed on Col. 1, Lines 28-36 the engine is deemed as stalled and on Col. 2, Lines 57-61 the control unit 4 activates motor 3.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KEITH COLEMAN whose telephone number is (571)270-3516. The examiner can normally be reached on 5:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571)272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAC

/K. C./

Examiner, Art Unit 3747

/Stephen K. Cronin/

Supervisory Patent Examiner, Art Unit 3747